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June 15, 1993

Ms. Donna R. Searcy, Secretary
Federal Communications Commission
1919 M Street, NW, Room 222
Washington DC 20554

RE: GEN. Docket 92-9/Ex parte Presentation

RECEIVED

JUN 15 1993

Dear Ms. Searcy:

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

Pursuant to Section 1.1206 of the Commission's Rules, this is to advise you that on June 15, representatives of AT&T met with the following members of the Office of Engineering & Technology and the Private Radio Bureau. The purpose of the meeting was to demonstrate the results of AT&T's 6GHz PCS experimentation and to support our previously submitted comments in this proceeding that selected frequencies above 3 GHz be reserved by the Commission for future use by PCS and other emerging technologies.

Attending for AT&T in addition to the undersigned were Richard Adleman, John Daly and Eshwar Pittampalli. OET attendees included Tom Stanley, Dave Siddall, Fred Thomas, Phil Inglis, Julius Knapp, Tom Derenge and Bill Daniel. From the PRB, Ralph Haller, Beverly Baker, Joe Levin, Bob McNamara, Martin Liebman, Steve Sharkey and David Furth were present.

The attached presentation materials were used during the meeting. Should any questions arise in this matter, they may be directed to me.

Sincerely,

A handwritten signature in cursive script, appearing to read "F. Mathewson".

cc: FCC attendees

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**AT&T PERSONAL
COMMUNICATIONS SERVICES
(PCS) TRIAL AT 6 GHz**

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JUN 15 1993

**FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY**

HG31875B.201



AT&T PCS TRIAL AT 6 GHz

Agenda

Why We Are Here

**Frank Mathewson,
Government Affairs Director**

Trial Description

**Rich Adleman, Division Manager
Personal Communications Services**

Demo Introduction

Rich Adleman



AT&T PCS TRIAL AT 6 GHz

Why We Are Here

- **Summarize AT&T's 6 GHz PCS trial experiences**
- **Demonstrate the technical feasibility of 6 GHz for future PCS or other mobile voice services**
- **Encourage the FCC to reserve a portion of 6 GHz and other selected frequencies for future use by mobile services**



AT&T

ADVANTAGES OF RESERVING FREQUENCIES FOR THE FUTURE

- **Gives FCC flexibility in meeting future spectrum needs through reservation of selected vacant or lightly used bands for future technologies**
- **Opportunities for new channels exist in 4, 6 and 11 GHz bands**
- **6 GHz guard bands are examples of light use**



AT&T PCS TRIAL AT 6 GHz

Objectives

- **Establish technical feasibility of 6 GHz spectrum for PCS**
- **Demonstrate technical feasibility of system equipment at 6 GHz**
- **Demonstrate the viability of a lightweight 6 GHz handset**
- **Study the propagation characteristics of 6 GHz signals in:**
 - **Urban**
 - **Suburban**
 - **Rural**
 - **Indoor**
 - **Enclosed areas**
- **Collect data and evaluate the user acceptance of grade of service at 6 GHz**
- **Examine costs and economics of 6 GHz technology**



AT&T PCS TRIAL AT 6 GHz

Highlights

- **Experimental licenses for PCS Trial granted - October 10, 1991**
- **Three cities (Boston, Atlanta, and Los Angeles) were selected for technical study**
- **Outdoor, indoor and tunnels have been studied for propagation characteristics**
- **A lightweight handset has been developed**
- **A complete network infrastructure has been established in Boston**
- **Six FCC Quarterly reports have been issued (January 15, 1992 - April 16, 1993)**



AT&T PCS TRIAL AT 6 GHz

Key Milestones

Installation of Mobile Switching Center (MSC) at Lawrence and Cell Site at Bear Hill	6/8/92
First Call Placed on Network	6/16/92
Upgrade of Bear Hill to 8 Sectors with Std. Gain Antennas	9/30/92
Installation of High Gain Fan-beam Antennas on New Tower	11/23/92
Bear Hill Network Validation Testing (NVT) Complete	1/14/93
Complete System Test Results Available	2/10/93



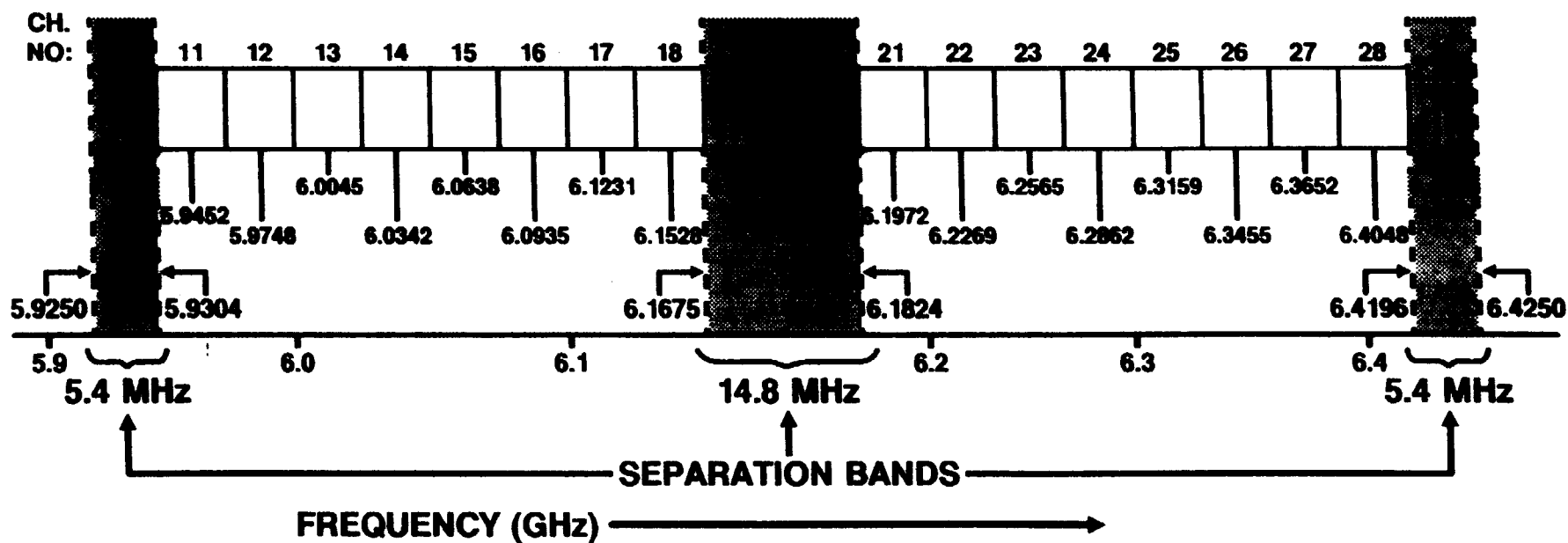
AT&T PCS TRIAL AT 6 GHz

Frequency Plan

6 GHz COMMON CARRIER SPECTRUM ALLOCATION REGULAR T PLAN

29.65 MHz SERVICE CHANNELS (11-18 & 21-28)

190 kHz AUXILIARY CHANNELS (10, 19, 20, & 29)



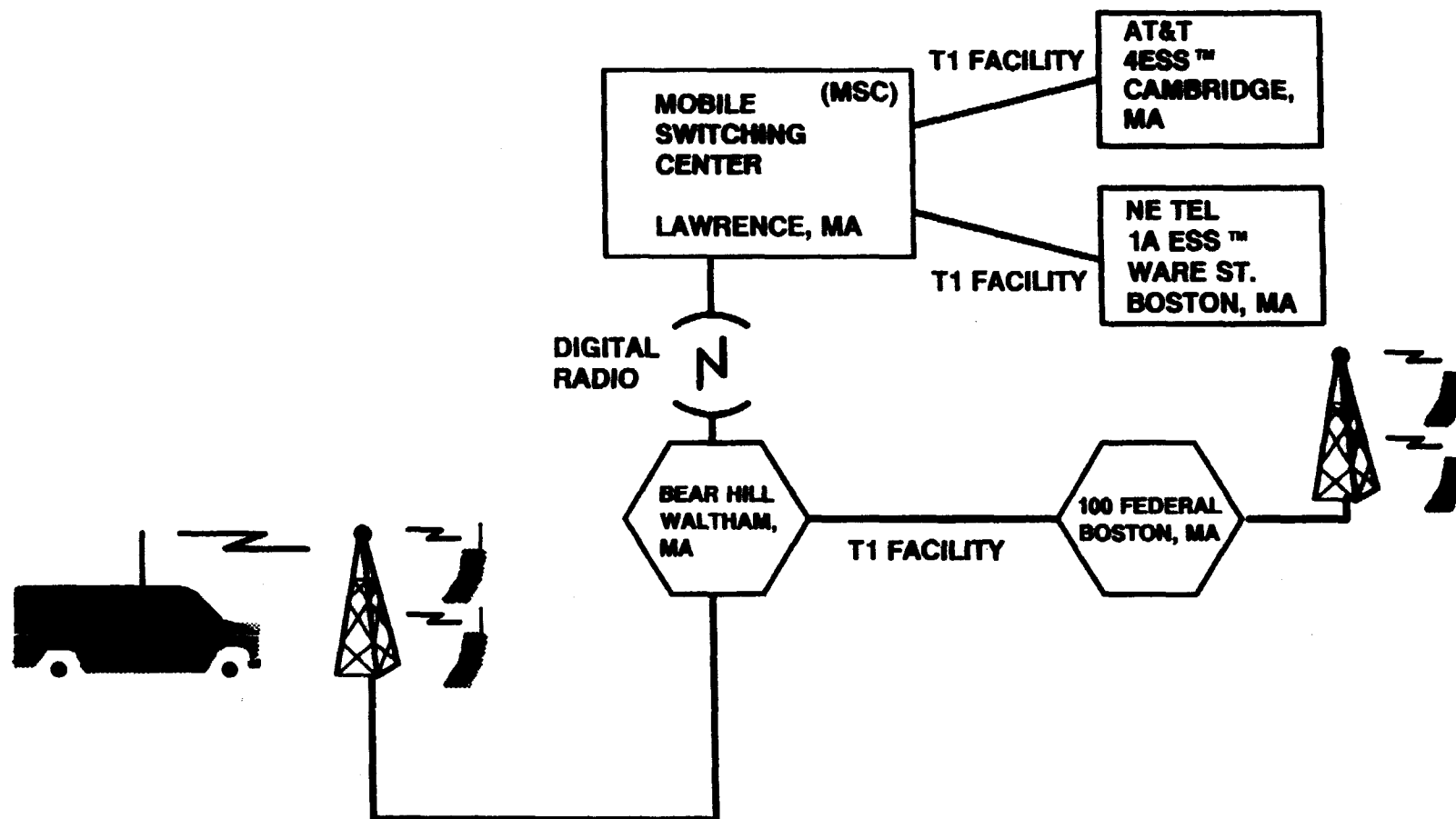


AT&T PCS TRIAL AT 6 GHz

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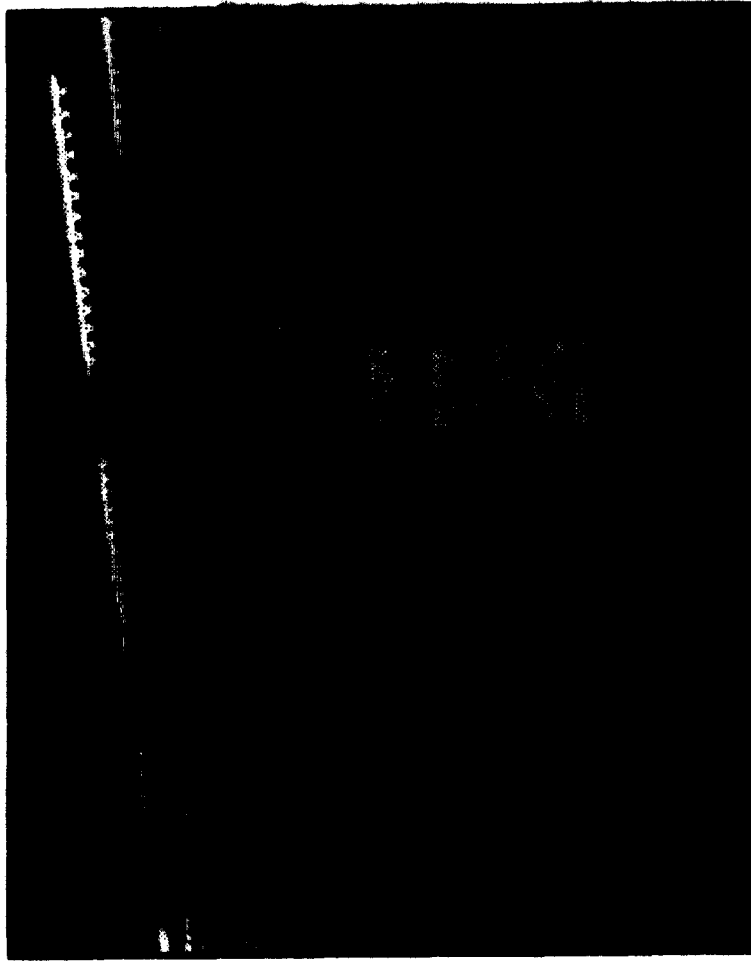


AT&T PCS TRIAL INFRASTRUCTURE





AT&T PCS TRIAL at 6 GHz Mobile Switching Center (MSC) Lawrence, MA

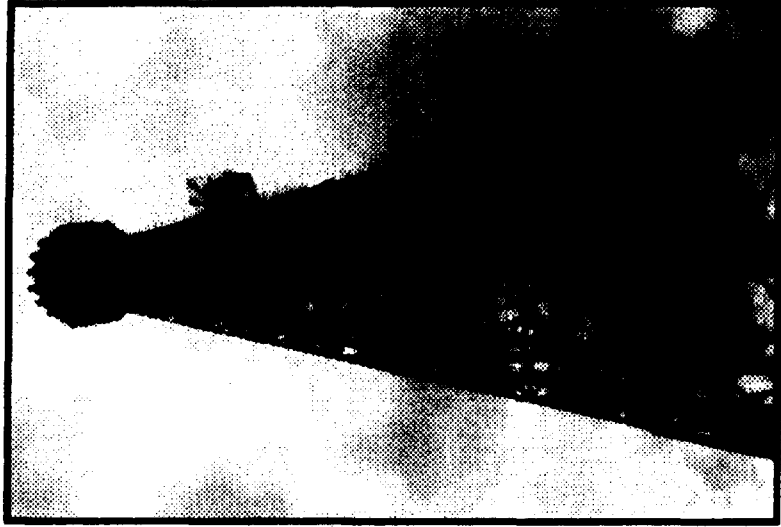




AT&T PCS TRIAL at 6 GHz

Bear Hill Cell Site Tower

Waltham, MA



at 6 GHz





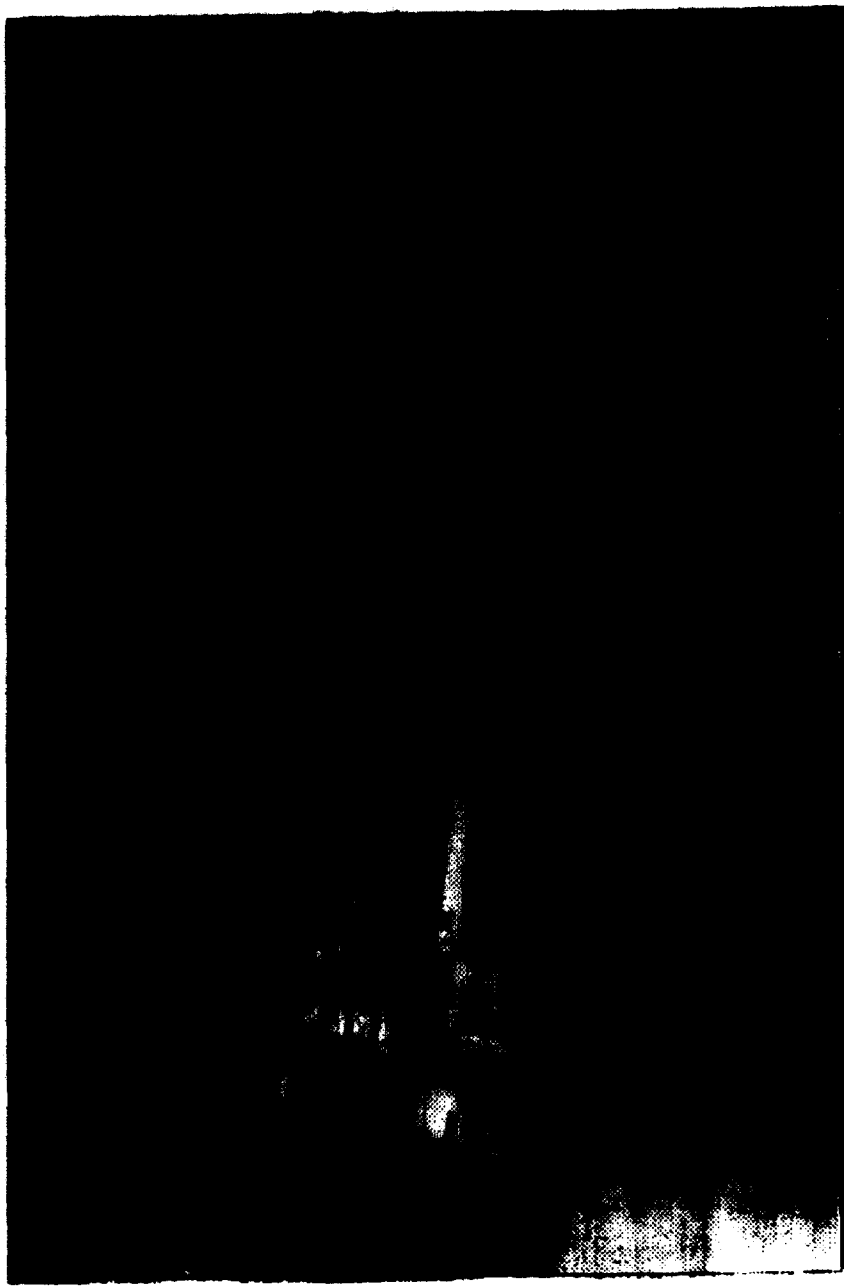
AT&T PCS TRIAL at 6 GHZ Handset



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AT&T PCS TRIAL at 6 GHz Handset Converter Module



PCS TRIAL AT 6 GHZ

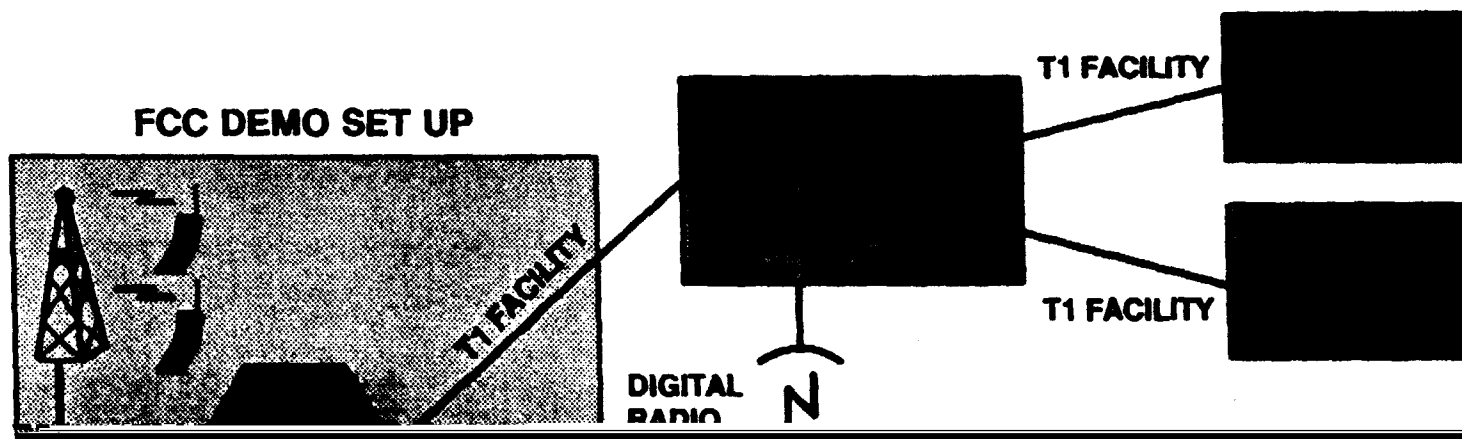
ton Area Coverage

and 100 Federal Street)





AT&T PCS TRIAL INFRASTRUCTURE WITH FCC DEMO SITE



O at 6 GHz
Cell Site



3 DEMO at 6 GHz DC Cell Site Antenna





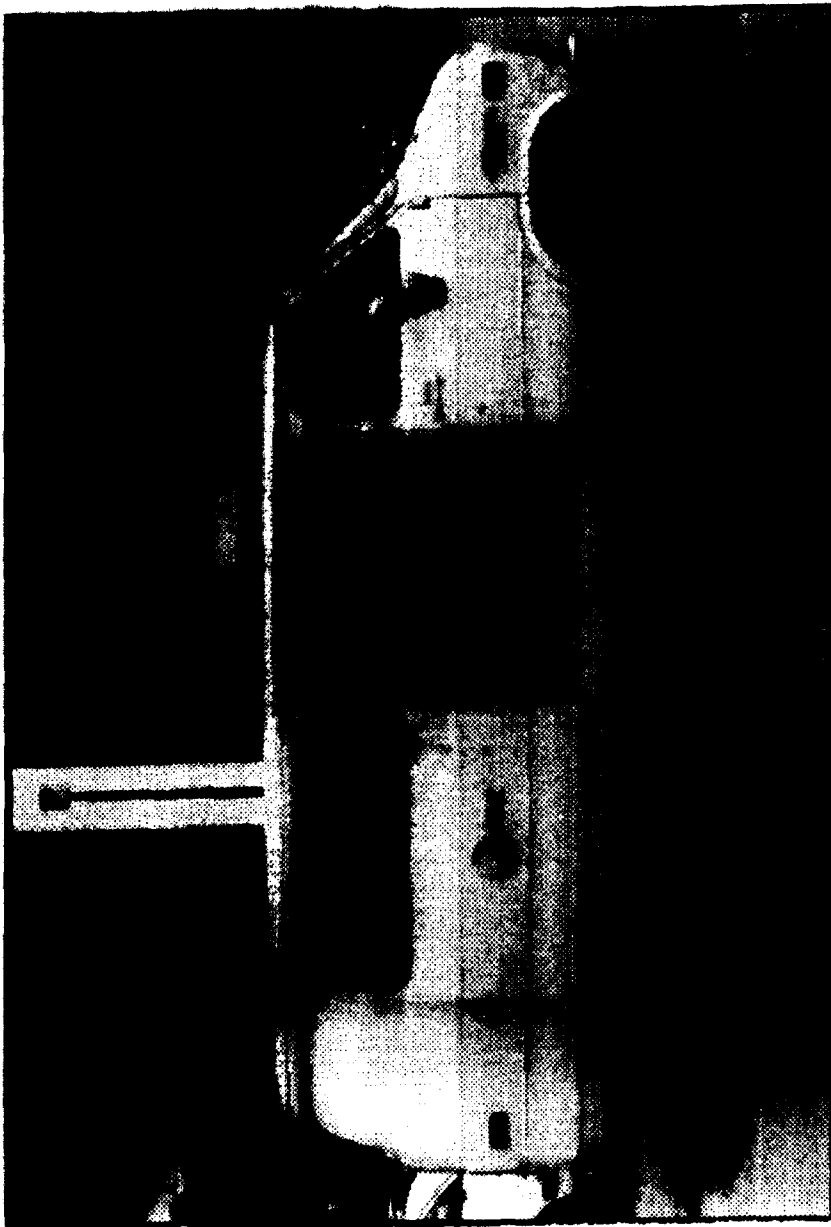
AT&T PCS DEMO at 6 GHz

Washington DC Cell Site (View from east tower)





AT&T PCS TRIAL at 6 GHz Propagation Coverage Measurement Van



6 GHz AT&T PCN Trial Handset Safety Summary

AT&T initiated an independent study in November 1991 at the University of Utah by the Department of Electrical Engineering on the subject of "6 GHz AT&T PCN Trial Handset Safety Analysis". Recent results from the study concluded that the AT&T 6 GHz PCN Trial handset complies with recognized industry safety guidelines (IEEE C95.1 - 1992). The complete report is being reviewed in the technical community and will be published in a recognized technical journal following completion of this review.